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Samsung Medison and Intel partner to improve anesthesia delivery

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NerveTrack can automatically identify nerves in real time for anesthesiologists

Samsung Medison and Intel are collaborating on NerveTrack™, a real-time nerve tracking ultrasound feature that helps anesthesiologists identify nerves in a patient's arm to help administer anesthesia quickly and accurately.

Leveraging the Intel Distribution of OpenVINO toolkit for computer vision and annotation, Samsung Medison's NerveTrack™ can potentially reduce scanning time by up to 30 percent.

Ultrasound-guided regional anesthesia (UGRA) is becoming standard practice for needle-based interventions, including vascular access and peripheral nerve block. However, even with UGRA, it can be difficult for anesthesiologists to correctly identify nerves, which can be as small as 2 millimeters in diameter, or to see the needle tip properly.

NerveTrack can automatically identify nerves in real time for anesthesiologists — reducing the possibility of complications while improving workflows.

NerveTrack was developed based on Intel's OpenVINO toolkit. It uses inference to detect and identify the location of a nerve area in real time during an ultrasound scan, improving the treatment workflow for anesthesiologists.

To train Samsung's proprietary real-time algorithm that automatically detects nerves in ultrasound images, a significant amount of clinical ultrasound data was required. And with Intel's OpenVINO CVAT (Computer Vision Annotation Tool), the total volume of training data increased up to 7 times, leading to improved accuracy of more than 20 percent.